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| EXAMINER |
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TUROC, DAVID P

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1792

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02/04/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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| Office Action Summary | Application No. 10/590,188 | Applicant(s) NASHERI ET AL. | |
| | Examiner DAVID TUROCY | Art Unit 1792 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-27 and 29-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-27 and 29-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendments, filed 1/19/2010, have been fully considered and reviewed by the examiner. The examiner notes the amendment to the claims to correct the dependency and therefore the claim objections have been withdrawn the claims have been considered on the record. Additionally, the examiner notes the cancellation of claims 2 and 28. The examiner notes the amendment to the specification. Claims 1, 3-27, 29-33 are pending in the instant application.

Specification

2. The amendment filed 1/19/2010 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The deletion of subject matter necessarily results in inclusion of added material into the scope of the claims because the scope of the disclosure has been modified. By amending 0045 and 0064, the applicant has removed certain information from the scope of the invention, specifically certain information regarding the working solution and this modification is impermissible as new matter by adjusting the scope of the claim which fail to exclude this subject matter. In other words the claims recite a working solution comprising acetic anhydride, but does not limit the scope of the claims to exclude species that are now deleted from the specification.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

3. Claims 8-18 are objected to because of the following informalities: claims include (“working pressure”), (“pressure kickback”) , or (“vacuum kickback”) within the claim. The use of parenthesis in the claim is inappropriate and the claims should positively recite the requirements, such as “by applying a working pressure comprising a further hydraulic or pneumatic pressure” or “creating a pressure kickback”, etc. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 8, 11-24, 31-33 are rejected under 35 U.S.C. 102(b) as being EP 0680810 A1, hereafter EP 810 as evidenced by the applicants specification.

EP 810 discloses a process for impregnating wood or wood based material comprising the steps of: preheating a working solution to a temperature of 80-150 °C contacting a wood or wood based material with the working solution at a and at an elevated pressure such that the working solution is in the liquid phase, to cause impregnation of the liquid base solution into the wood or wood based material; and c.

Art Unit: 1792

separating the wood or wood based material and any remaining working solution, waste material and/or by-products (see entire reference, particularly page 3, figure).

The temperature of the solution of EP 810 is above the atmospheric boiling point ("a super hot temperature") of the working solution, see applicants specification at page 2 which discloses boiling point of acetic anhydride is 139°C.

As for maintaining a pressure throughout the preheating step to ensure the working solution is maintained in a liquid phase, this is explicitly inherent in the teaching of EP 810 that the solution is a liquid solution warmed and applied. Additionally, the examiner notes the claims fail to require the entire solution to remain in liquid form and therefore since the prior art discloses a 150° super heated liquid, it is the examiners position that the pressure is maintained so as to ensure a working solution is liquid,

Claim 3: EP 810 discloses preheating and pre-pressure (see figure).

Claim 8: EP 810 discloses a pressure to assist impregnation.

Claims 11-13: EP 810 discloses a few minutes of impregnation (page 3, lines 20-24).

Claims 14-18: EP 810 discloses the limitations of these claims (page 3, figure).

Claim 19: EP 810 discloses the by-product of acetic acid and water, which has a lower boiling point.

Claim 20: EP 810 discloses solid wood, chips, flakes, boards, etc. (page 3, line 1-2).

Claim 21: EP 810 discloses a storage vessel for the working solution and a warming vessel, each of which can be considered a pressure vessel. Additionally EP 810 discloses a pressure vessel for the wood (see figures).

Claims 22: EP 810 discloses a vessel (pipe) in communication with the second pressure vessel (see figure).

Claim 23-24: EP 810 discloses a preheating to 150°C.

Claims 31-32: EP 810 discloses the limitation of these claims that are not specifically addressed above (see figure).

Claim 33: EP 810 discloses a wood treated by the method as claimed.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, 6-8, 11-24, 31-33 are rejected under 35 U.S.C. 102(b) as being EP 0680810 A1, hereafter EP 810 as evidenced by the applicants specification.

EP 810 discloses all that is taught above, however the reference fails to explicitly disclose the pressure during the preheating, however, taking the teaching that the treating solution is to remain liquid, it would have been obvious to one of ordinary skill in the art to apply pressure during the preheating step to maintain the solution in liquid

Art Unit: 1792

state because one would reasonable expect predictable results in the modification and one would be motivated to provide a liquid medium.

Claims 3 and 8 are addressed above.

Claim 6-7: The amount of pressure applied to the working solution during the preheating step would have been obvious to one of ordinary skill in the art to achieve the desired results of maintaining the process solution in the liquid phase.

Claim 9-10: EP 810 discloses a pre-pressure, and discloses a pressure of 2-15 bar for a pressurization and therefore it would have been obvious to have used the 2-15 bar as the pre-pressure with a reasonable expectation of success and In the case where the claimed ranges “overlap or lie” inside ranges disclosed by prior art a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257 191 USPQ 90. See MPEP 2144.05.

Claim 11-20: these claims are address above and explicitly taught in the figures and page 3.

Claims 21-22: The examiner maintains the position with regards to the pressure vessel as claimed, however, at the very least, modification of the prior art to include a pressure vessel would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the predictable results of providing pressure to the working fluid.

Claims 23-24: These are address above.

Claim 25-26: EP 810 discloses warm solution at 150°C and therefore fails to disclose the exact range as claimed. However, A *prima facie* case of obviousness

Art Unit: 1792

exists where the claimed ranges and prior art do not overlap but are close enough that one in ordinary skill in the art would have expected them to have the same properties.

Titanium Metals Corp. of America v. Banner, 778 f.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.05.

Claims 31-33 are addressed above.

8. Claim 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 810 in view of US Patent 5679407 hereinafter US 407 or US Patent 4466998 hereinafter US 998.

EP 810 discloses all that is taught above, including applying a pre-pressure to the chamber; however, the reference fails to disclose using a gas as claimed.

However, US 407 discloses applying a pre-pressure to a wood prior to impregnation using N₂ gas and US 998 discloses providing pre-pressure using air. Therefore it would have been obvious to have modified EP 810 to have used N₂ or air gas to provide the pre-pressure because such is taught as known and suitable techniques in wood impregnation art to provide preliminary pressure prior to impregnation.

Claim 5: this claim is rejected for the reasons as set forth above.

9. Claims 25-27, 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 810 in view of US Patent 6376582, hereinafter US 582.

Claims 25-26: EP 810 discloses all that is discussed above, and while the examiner maintains the position as above, the examiner cites US 582 which discloses

Art Unit: 1792

applying a heated solution of 140-210 to the wood in an acetylating process and therefore modification EP 810 to use the solution temperature as taught in the US 582 with a reasonable expectation of predictable results.

Claims 27, 29-30: EP 810 discloses applying acetic anhydride solution to the wood, but fails to disclose a solvent of xylene, however, US 582 discloses the advantages of using xylene as a solvent for acetic anhydride include providing the reaction to proceed under more moderate conditions rather than the traditional exothermic conditions which will result in wood degradation. Therefore taking the references collectively, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified EP 810 to use xylene to achieve the benefit of reduction of wood degradation.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 1792

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID TUROCY whose telephone number is (571)272-2940. The examiner can normally be reached on Monday, Wednesday and Friday from 7 a.m. - 6 p.m., Tuesday and Thursdays 7-10 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David Turocy/
Primary Examiner, Art Unit 1792